## REMARKS

This paper is being provided in response to the Office Action mailed September 12, 2002, for the above-referenced application. In this response, Applicants have amended claims 1, 5, 11, 12 and 20 in order to clarify that which Applicants regard as the invention. Applicants respectfully submit that the amendments to the claims are all supported by the originally filed application.

The rejection of claims 1-4 and 9-12 under 35 U.S.C. 112, second paragraph, as being indefinite, is hereby traversed for the reasons set forth below.

Applicant's independent claim 1 recites the feature "wherein said weft and warp thread groups are connected together." Applicants respectfully submit that, in looking to the specification, one or ordinary skill would understand the meaning of the recited feature and be suitably apprised of the scope of the invention. Specifically, in the section entitled "Summary of the Invention" beginning on page 2, line 28, the specification discloses that a preferable means of connecting the weft and warp thread groups is by weaving or knitting. Applicants also disclose the use of leno threads or the use of adhesives to connect thread groups. (See page 1, line 31 to page 2, line 5). Applicant respectfully submits that a person of ordinary skill in the art would recognize that connecting the weft and warp thread groups can be performed by weaving, knitting, or other type of connecting procedure. Accordingly, Applicant respectfully requests that this rejection be reconsidered and withdrawn.

The rejection of claims 1-5, 9-13 and 20-23 under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,020,275 to Stevenson et al. (hereinafter "Stevenson") in view of U.S. Patent No. 5,707,903 to Schottenfeld (hereinafter "Schottenfeld") is hereby traversed and reconsideration thereof is respectfully requested in view of the amendments to the claims contained herein.

Applicant's independent claim 1, as amended herein, recites a textile grating for reinforcing layers that has a plurality of individual threads of high-strength synthetic yarns grouped to form weft thread groups and warp thread groups. The weft and warp thread groups are connected to each other such that each weft and warp thread group is at a spacing of at least 8 mm relative to the respectively adjacent parallel thread group to provide for penetration of the grating by the layers. The weft and warp thread groups are covered by a polymer coating that contains regularly distributed gas inclusions such that the polymer coating is a foam structure that provides an increased specific volume and compressibility to the coating.

Applicant's independent claim 5, as amended herein, recites a method of producing a textile grating for reinforcing layers in which high strength warp threads are connected together with weft threads. The warp and weft threads are connected to form warp and weft thread groups which are each at a spacing of at least 8 mm with respect to the respectively adjacent parallel thread group to provide for penetration of the grating by the layers. The thread groups are wetted with a material that is capable of flow and that contains a polymer-forming substance. The warp and weft thread groups are covered with a coating by virtue of the polymer setting.

The material that is capable of flow is a propellant that produces gas inclusions during setting of the polymer that provides an increased specific volume and compressibility to the coating.

Applicant's independent claim 20, as amended herein, recites a method of reinforcing layers including providing a textile grating. The textile grating has a plurality of individual threads of high-strength synthetic yarns forming weft thread groups connected to warp thread groups. The weft and warp thread groups are each at a spacing of at least 8 mm relative to the respectively adjacent parallel thread group and are covered by a polymer coating. The polymer coating contains distributed gas inclusions so that the polymer coating is of a foam structure that provides an increased specific volume and compressibility to the coating.

Stevenson discloses bonded composite open mesh structural textiles formed of woven textiles including multifilament yarn. A plurality of warp yarns are woven with a plurality of weft yarns. (See Figure 1 and col. 8, lines 31-57). A non-foam polymer component is applied to encapsulate and bond yarns at the warp and weft junctions to strengthen the junctions. The polymer is applied as a spray, bath, or a sheet which is heated, so that the polymer flows around and encapsulates the yarn components; optimized film properties of the coating are achieved by the use of a cross-linked urethane polymer. (See col. 11, lines 5-22).

Schottenfeld discloses a flexible laminated liner having a non-slip side and decorative side opposite the non-slip side. The liner 10 is comprised of a non-slip pad 12 having a decorative sheet covering 14 bonded to the pad by a layer of adhesive 16. The non-slip pad is formed from a scrim 20 coated with a PVC foam 22. (See col. 2, lines 14-19). The resulting

pad 12 has generally uniform open cells 26 corresponding to the openings in the scrim 20. A continuous decorative covering 14 is then bonded to the pad 12 to form the liner 10. The decorative covering 14 covers the open cells of the pad 12 which prevents debris and small objects from falling into the open cells. (See col. 4, lines 10-19).

Applicant's independent claims recite the application of a polymer coating having a foam structure to the warp and weft threads. Applicant has found that a softer and more resilient material such as foamed PVC likely enhances the protection of the coated threads in geotextiles. The brittle solid coating typically applied to geotextile materials may be damaged during installation due to the charges of earth and gravel layers and thus subject the underlying threads to damage. In some cases, the softer and more flexible foam coating provides better protection, especially in cases of deformation and stretching of the geotextile. The foam structure of the polymer coating provides an increased specific volume and compressibility to the coating.

Stevenson fails to teach that the composite open mesh structural textile is coated with a foamed PVC material. (See Office Action, page 4). Instead, Stevenson teaches the use of conventional solid, non-foamed plastic coatings, which were thought to provide the highest protection of reinforcement yarns. The Office Action relies on the teachings of Schottenfeld to create a structural textile of Stevenson coated with the PVC foam of Schottenfeld. Applicant respectfully submits that neither Stevenson nor Schottenfeld, taken alone or in combination, teach or suggest a polymer coating having a foam structure applied to a textile grating that provides an increased specific volume and compressibility to the coating.

Stevenson's non-foam polymer coating flows around and encapsulates the yarn groups to strengthen the junctions of the yarn groups. Stevenson's stiffening, non-foam coating does not provide an *increased specific volume and compressibility to the coating* as is claimed by Applicant. Stevenson's non-foam polymer coating is of a kind conventionally used in the field to provide a hard-shell protective coating to textile gratings. Thus, Stevenson's teaching lacks the advantages of Applicant's foamed coating with an increased specific volume and compressibility.

Schottenfeld's foamed PVC applied to the underside pad 12 of the liner 10 provides a high-friction material which resists sliding across adjacent surfaces even when the adjacent surfaces are very smooth. Schottenfeld does not teach or suggest a foamed PVC coating that provides *an increased specific volume and compressibility to the coating* as is claimed by Applicant. Furthermore, increased volume and compressibility of the web-like pad of Schottenfeld's liner would work contrary to the decorative purpose of the liner. Objects placed on a decorative liner with the web-like pad having a large volume and high compressibility would leave unsightly depressions in the liner and potentially even affect removal of objects placed on the liner.

Furthermore, Applicant particularly notes with respect to dependent claim 2 that nothing in the prior art of record teaches or suggests *impregnation of individual threads* by a foam polymer coating. Stevenson discloses *encapsulation* of the yarn groups to strengthen yarn group junctions by a non-foam polymer coating. Schottenfeld discloses application of a foam PVC coating to the exterior of a scrim to form a non-slip pad. Applicant's recitation of impregnation

of individual threads provides the advantages of increased specific volume and compressibility to individual threads.

Additionally, Applicant respectfully submits that there is no motivation to combine the teachings of Stevenson with Schottenfeld in that the unusual combination of these references would generate a textile grating unsuitable for the purposes of either disclosure. Schottenfeld's PVC foam coating on the underside pad in contact with a surface is for the purpose of providing a non-slip, frictional interface to prevent unwanted sliding of the liner on a smooth surface such as a shelf. The decorative lining adhesively applied to the pad provides a eye-pleasing surface and prevents debris and small objects from falling into the open cells of the pad, thereby limiting the soiling of the liner.

In contrast, Stevenson's structural textile (like Applicant's invention) is placed between ground layers during construction and loaded with layer charges such as dirt or gravel. The openings in the structural textile allow penetration of the charge so as to provide structural support. Stevenson's non-foam polymer coating helps protect the textile and underlying yarns from damage due to the loads resulting from the charges. Stevenson's disclosure relies on the *open configuration* of the textile grating to provide structural support which is protected by the non-foam polymer coating, whereas Schottenfeld's disclosure relies on the *solid covering* of the decorative layer to eliminate holes through the liner, and the PVC foam provides a non-slip, frictional surface on the underlying pad. The purposes of the features in the two references directly conflict with one another as to render a combination of the teachings infeasible.

Schottenfeld's decorative shelf liner is as useful in heavy-duty groundwork construction as lingerie is to parachutes.

Based on the foregoing, Applicant respectfully requests that this rejection be reconsidered and withdrawn.

The rejection of claims 6-8, 14, 16, 17 and 18 under 35 U.S.C. 103(a) as being unpatentable over Stevenson in view of Schottenfeld and further in view of U.S. Patent No. 4,434,251 to Sasajima et al. (hereinafter "Sasajima") is hereby traversed and reconsideration thereof is respectfully requested in view of the amendments to the claims contained herein.

Sasajima discloses an apparatus and method for a cross-linked polyvinyl chloride resin foam. A shaped polyvinyl chloride resin is thermally formed by such processes as blowing hot air in temperatures ranging from 170 to 250 °C.

The features of the independent claims have been discussed above with respect to Stevenson and Schottenfeld. Applicants respectfully submits that the teachings of Sasajima fail to overcome the deficiencies of Stevenson and Schottenfeld with respect to the independent claims in that the references, taken alone or in combination, do not teach or suggest a textile grating with a polymer coating having a foam structure that provides an increased specific volume and compressibility to the coating. Accordingly, Applicant respectfully requests that this rejection be reconsidered and withdrawn.

The rejection of claims 5, 7, 15 and 19 under 35 U.S.C. 103(a) as being unpatentable over Stevenson in view of U.S. Patent No. 5,346,278 to Dehondt (hereinafter "Dehondt") is hereby traversed and reconsideration thereof is respectfully requested in view of the amendments to the claims contained herein.

Dehondt discloses a non-slip high chair cushion having globules of rubbery polymeric material deposited on a scrim fabric by dipping the fabric in a plastic foam material. The cushion is lies flat against a smooth high chair seat and maintains a high coefficient of friction between the high chair seat and an infant.

The features of the independent claims have been discussed above with respect to Stevenson. Applicants respectfully submits that the teachings of Sasajima fail to overcome the deficiencies of Stevenson with respect to the independent claims in that the references, taken alone or in combination, do not teach or suggest a textile grating with a polymer coating having a foam structure that provides an increased specific volume and compressibility to the coating. Accordingly, Applicant respectfully requests that this rejection be reconsidered and withdrawn.

Based on the above, Applicant respectfully requests that the Examiner reconsider and withdraw all outstanding rejections and objections. Favorable consideration and allowance are earnestly solicited. Should there be any questions after reviewing this paper, the Examiner is invited to contact the undersigned at 617-248-4038.

Respectfully submitted,
CHOATE, HALL & STEWART

Donald W. Muirhead
Registration No. 33,978

Date: December 12, 2002

Choate, Hall & Stewart
Exchange Place
53 State Street
Boston, MA 02109
Phone: (617) 248-5000
Fax: (617) 248-4000

## CLEAN-COPY LIST OF ALL PENDING CLAIMS AS AMENDED

1. A wide-mesh textile grating for reinforcing layers, comprising:

a plurality of individual threads of high-strength synthetic yarns forming weft thread groups and warp thread groups, wherein said weft and warp thread groups are connected together and wherein said weft and warp thread groups are each at a spacing of at least 8 mm relative to the respectively adjacent parallel thread group to provide for penetration of the grating by the layers, and wherein the warp thread groups and the weft thread groups are covered by a polymer coating, characterised in that the polymer coating contains regularly distributed gas inclusions so that the polymer coating is of a foam structure that provides an increased specific volume and compressibility to the coating.

2. A textile grating according to claim 1 characterised in that the individual threads of the warp thread group and the weft thread group comprise multifilament yarns which are impregnated by the foam polymer coating.

3. A textile grating according to claim 1 characterised in that the polymer coating comprises PVC.

4. A textile grating according to claim 1 characterised in that the gas inclusions are of a diameter less than 1 mm.

5. A method of producing a textile grating for reinforcing layers in which high-strength warp threads and weft threads are connected together in such a way that they are respectively combined together to form warp thread groups and weft thread groups which are each at a spacing of at least 8 mm with respect to the respectively adjacent parallel thread group to provide for penetration of the grating by the layers, and wherein the thread groups are then wetted with a material which is capable of flow and which contains a polymer-forming substance and wherein said warp and weft thread groups are covered with a coating by virtue of setting of the polymer, characterised in that added to the material which is capable of flow is a propellant which produces gas inclusions during setting of the polymer that provides an increased specific volume and compressibility to the coating.

6. A method according to claim 5 characterised in that the material which is capable of flow is a pasty mixture comprising PVC mixed with a plasticiser and that the textile grating is heated to a high temperature for gelling the polymer coating of PVC.

7. A method according to claim 5 characterised in that the material which is capable of flow is formed by a polymer dispersion, and that the textile grating is heated to a high temperature above 100°C for evaporation of the water contained in the dispersion and for polymerisation.

8. A method according to claim 5 characterised by the use of a propellant which liberates gas bubbles at a high temperature of over 100°C.

9. A textile grating according to claim 2 characterized in that the polymer coating comprises PVC.

10. A textile grating according to claim 9 characterized in that the gas inclusions are of a diameter of less than 1 mm.

11. A textile grating according to claim 1 characterized in that the gas inclusions are of a diameter of less than 0.3 mm.

12. A textile grating according to claim 9 characterized in that the gas inclusions are of a diameter of less than 0.3 mm.

13. A method of producing a textile grating according to claim 5, wherein said warp threads and said weft threads are connected together by a weaving or knitting procedure.

14. A method of producing a textile grating according to claim 6, wherein the textile grating is 200°C.

15. A method of producing a textile grating according to claim 7, wherein the polymer dispersion is a latex dispersion, a polyacrylic dispersion, or a polyurethane dispersion.

16. A method according to claim 6 characterized by the use of a propellant which liberates gas bubbles at a high temperature of over 100°C.

17. A method according to claim 7 characterized by the use of a propellant which liberates gas bubbles at a high temperature of over 100°C.

18. A method according to claim 14 characterized by the use of a propellant which liberates gas bubbles at a high temperature of over 100°C.

19. A method according to claim 15 characterized by the use of a propellant which liberates gas bubbles at a high temperature of over 100°C.

20. A method of reinforcing layers, comprising:

providing a textile grating having a plurality of individual threads of high-strength synthetic yarns forming weft thread groups connected to warp thread groups, wherein said weft and warp thread groups are each at a spacing of at least 8 mm relative to the respectively adjacent parallel thread group, and wherein the warp thread groups and the weft thread groups are covered by a polymer coating, containing regularly distributed gas inclusions so that the polymer coating is of a foam structure that provides an increased specific volume and compressibility to the coating;

installing a textile grating on a first layer; and

covering the textile grating with a second layer.

21. A method according to claim 20, wherein at least one of the layers is a ground layer.

22. A method according to claim 20, wherein the layers penetrate the spacing between the warp and weft thread groups and deform the textile grating to frictionally interlock the layers with the textile grating.

23. A method according to claim 21, wherein the layers penetrate the spacing between the warp and weft thread groups and deform the textile grating to frictionally interlock the layers with the textile grating.